(12) STANDARD PATENT APPLICATION (11) Application No. **AU 2003271286 A1**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
A fibre cement joint

(51)[7] International Patent Classification(s)
E04F 021/165 **F16B 005/08**
F16B 011/00

(21) Application No: **2003271286** (22) Date of Filing: **2003.12.19**

(30) Priority Data

(31) Number	(32) Date	(33) Country
2002953441	**2002.12.19**	**AU**

(43) Publication Date: **2004.07.08**
(43) Publication Journal Date: **2004.07.08**

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A FIBRE CEMENT JOINT

Abstract

In combination a first and a second sheet member, the sheet members typically being fibre cement sheets, the sheets having abutting edges joined by a filler within which a tape is embedded. The tape has a Young's Modulus of at least 1.8 by 10^3 mega pascals.

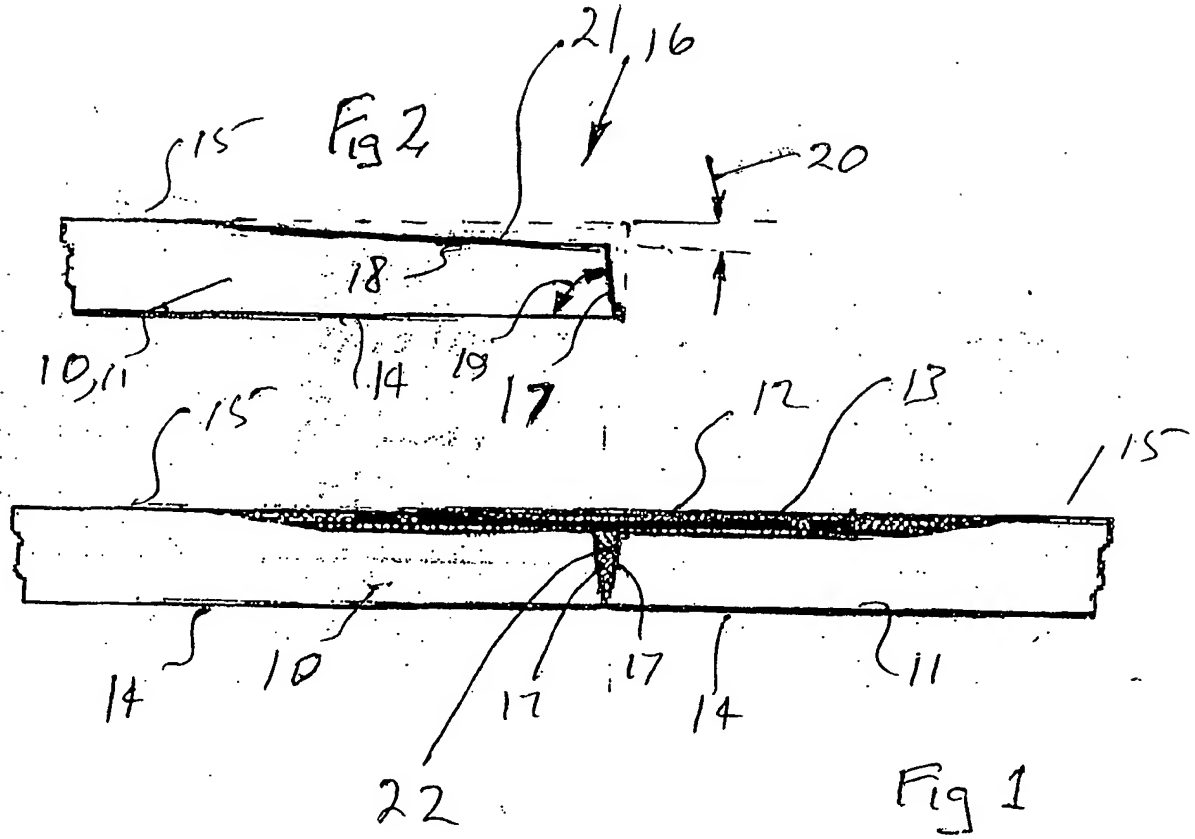

Fig 2

Fig 1

S&F Ref: 661557

AUSTRALIA

PATENTS ACT 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

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Invention Title:	A Fibre Cement Joint

ASSOCIATED PROVISIONAL APPLICATION DETAILS

[33] Country	[31] Applic. No(s)	[32] Application Date
AU	2002953441	19 Dec 2002

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

A FIBRE CEMENT JOINT

Technical Field

The present invention relates to the joining of sheet material and more particularly, but not exclusively, to the joining of fibre cement sheet material.

Background of the Invention

Typically, fibre cement sheets are joined by a fibreglass tape embedded in a joining composition located between the two sheets. The joining composition is typically a low modulus acrylic or styrene acrylic based composition.

The above discussed known method of joining sheet material has a number of problems including:

(1) if a gap is left between the sheets it is not uncommon for bulging or peaking of the composition to occur due to changes in the gap between the sheets resulting from environmental changes and/or structural movements; and

(2) cracking of the filler material if the sheets are closely butted.

Object of the Invention

It is the object of the present invention to overcome or substantially ameliorate at least one of the above disadvantages.

Summary of the Invention

There is disclosed herein in combination, a first and a second sheet member, each sheet member having a front and a rear major surface joined by an edge portion, the sheet members being arranged so as to have abutting edge portions, and wherein the sheet members are joined by a tape extending across the abutting edge portions and by a filler material within which the tape is substantially embedded, said tape having a Young's Modulus of at least 1.8×10^3 mega pascals.

Preferably said tape has a Young's Modulus of about 2.3×10^3 mega pascals.

There is further disclosed herein a sheet member to be joined to an adjacent member of similar configuration, said sheet member having:

a major front surface;

a major back surface; and

an edge portion joining the front surface and the back surface, said edge portion including;

a first edge surface extending from the back surface at acute angle to said back surface; and

a second edge surface extending from the front surface and joined to the first surface, said second surface relative to said front surface providing a depression to receive a tape and filler material to secure said sheet member to said adjacent member, said second surface being inclined to said top surface at an acute angle smaller than the acute angle between said first surface and said back surface.

Preferably, said first surface is inclined to said back surface by an angle of between 60 degrees to 85 degrees.

Preferably, said second surface is inclined to said front surface by an angle of between 5 degrees and 20 degrees.

There is still further disclosed herein, in combination, the above-mentioned sheet member and adjacent member secured together by means of said filler and tape, with the members abutting so that the edge portion of said sheet member is adjacent the edge portion of said adjacent member, and said tape extends between the depression of said sheet member and the depression of said adjacent member and is embedded in said filler.

Brief Description of the Drawings

A preferred form of the present invention will now be described, by way of example only, with reference to the accompanying drawings, wherein:

Figure 1 is a schematic side elevation of a sheet member joined to a like sheet member by means of a filler and tape; and

Figure 2 is a schematic end elevation of one of the sheet members of Figure 1.

Detailed Description of the Preferred Embodiments

In the accompanying drawings, there is schematically depicted a first sheet member 10 joined to an adjacent second sheet member 11 by means of a filler 12 and tape 13.

The sheet members 10 and 11 are preferably fibre cement sheets, each having a major back surface 14 and a major front surface 15.

Each sheet 10 and 11 has an edge portion 16 joining the back surface 14 with the front surface 15. The edge portion 16 includes a first edge surface 17 extending to a second edge surface 18. The edge surface 17 extends from the back surface 14 and is inclined thereto by an acute angle 19. The second edge surface 18 extends from the front surface 15 by an acute angle 20 and extends to the first edge surface 17. As can be seen from Figure 2 the angle 20 is considerably less than the angle 19. For example, the angle

19 may be between 60 and 85 degrees while the angle 20 may be between 5 and 20 degrees.

The surface 18 extends from the surface 15 so as to provide a depression 21.

When joining the sheet 10 to the sheet 11, the sheets 10 and 11 are abutted so that the adjacent surfaces 17 diverge from the abutting portions and provide a cavity 22. The filler material 12 is applied to the cavity 17 and adjacent depressions 21 and the tape 13 applied. The filler 13 when cured secures the tape 13 to the abutting sheets 10 and 11.

Preferably, the tape 13 is perforated tape so that the filler material 12 can pass therethrough. Typically, sufficient filler material 12 would be applied that a user would be required to level the filler material 12 so that the outer surface thereof is generally co-planar with the surfaces 15.

Preferably, the tape has a Young's Modulus of at least 1.8×10^3 mega pascals.

Preferably, the tape has a Young's Modulus of about 2.3×10^3 mega pascals.

Preferably, the tape is perforated so that approximately 3 percent of the area is provided by the perforations.

Preferably, the tape has a thickness of about 0.4 mm to about 0.5 mm.

Preferably, the tape is a stiff non-plasticised PVC or polyester tape.

One example of the filler is as follows:

Raw material	Proportion %	Quantity Kg/Batch
Propylene Glycol	4.35	100
Acrylic Emulsion	21.8	502
Biocide	.1	2.14
Dispersant	.1	2.14
Surfactant	.1	1.3
Aqa Ammonia 25%	.2	5.14
Thickener	.1	3.4
Mica	1.3	30
Clay	.4	9.00
Dispersant	.04	0.86
Calcium carbonate	65.6	1500
Fungicide	.05	1.16
Methyl Ethyl Ketone	1.9	40
Water	3.96	90

Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms.

The claims defining the invention are as follows:

1. In combination, a first and a second sheet member, each sheet member having a front and a rear major surface joined by an edge portion, the sheet members being arranged so as to have abutting edge portions, and wherein the sheet members are joined by a tape extending across the abutting edge portions and by a filler material within which the tape is substantially embedded, said tape having a Young's Modulus of at least 1.8×10^3 mega pascals.

2. The combination of claim 1, wherein said tape has a Young's Modulus of about 2.3×10^3 mega pascals.

3. A sheet member to be joined to an adjacent member of similar configuration, said sheet member having:

a major front surface;

a major back surface; and

an edge portion joining the front surface and the back surface, said edge portion including;

a first edge surface extending from the back surface at acute angle to said back surface; and

a second edge surface extending from the front surface and joined to the first surface, said second surface relative to said front surface providing a depression to receive a tape and filler material to secure said sheet member to said adjacent member, said second surface being inclined to said top surface at an acute angle smaller than the acute angle between said first surface and said back surface.

4. The sheet member of claim 3, wherein said first surface is inclined to said back surface by an angle of between 60 degrees to 85 degrees.

5. The sheet member of claim 3 or 4, wherein said second surface is inclined to said front surface by an angle of between 5 degrees and 20 degrees.

6. In combination, the sheet member of claim 3, 4 or 5, and an adjacent member of similar constructed secured together by means of said filler and tape, with the

members abutting so that the edge portion of said sheet member is adjacent the edge portion of said adjacent member, and said tape extends between the depression of said sheet member and the depression of said adjacent member and is embedded in said filler.

Dated 19 December, 2003

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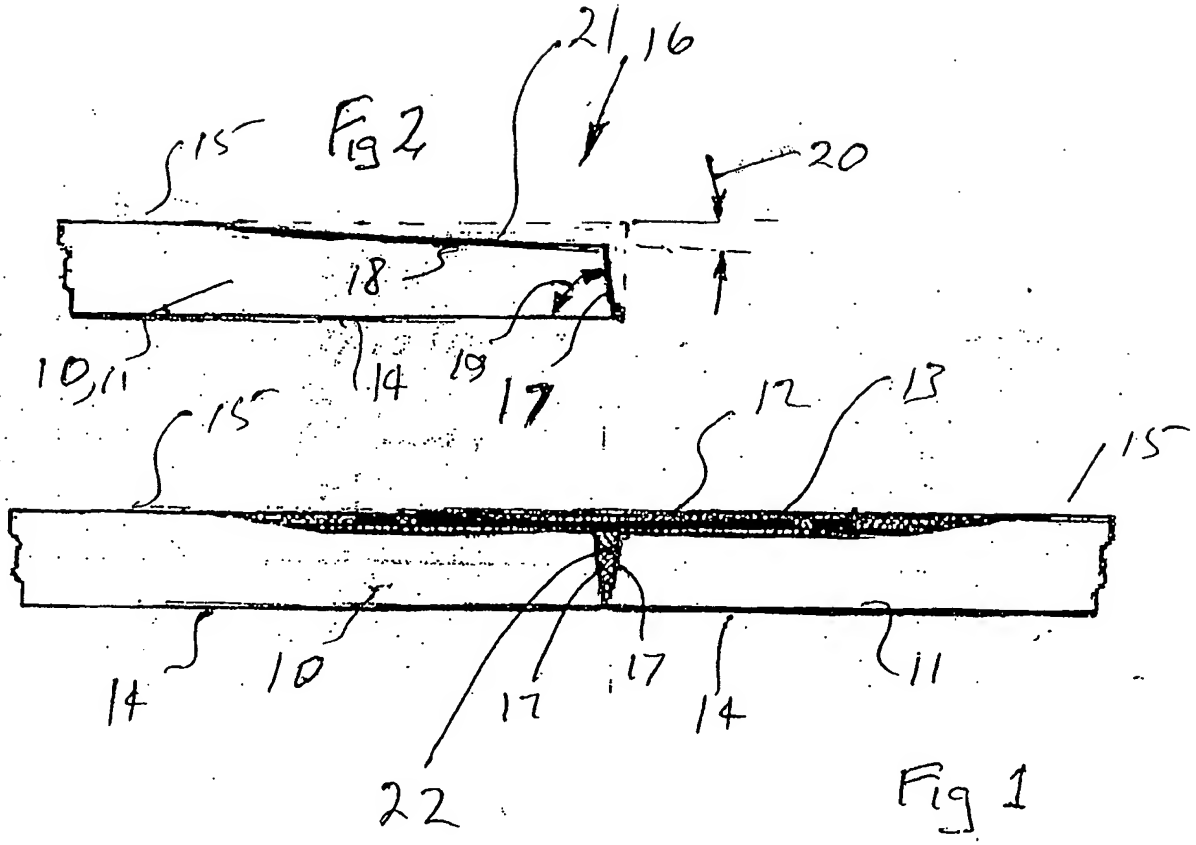

Fig 2

Fig 1